

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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7-29-03

In re:

U.S. Application of:

Takeshi MORIKAWA

For:

IMAGE FORMING APPARATUS CAPABLE OF
IMAGE FORMATION IN A PLURALITY OF
MODES

U.S. Serial No.:

08/941,459

Confirmation No.:

6001

Filed:

September 30, 1997

Group Art Unit:

2622

Examiner:

Joseph R. Pokrzywa

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MS APPEAL BRIEF-PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: **MS APPEAL BRIEF-PATENTS**, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on

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Tung T. Nguyen

Name of Applicant, Assignee, or Registered Representative

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July 14, 2003

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BRIEF FOR APPELLANT

This is an appeal from the Final Rejection dated December 17, 2002 rejecting claims 4-6, 13-16 and 23-35 in the present Application. A Notice of Appeal was filed on May 16, 2003, resulting in an Appeal Brief due date of July 16, 2003.

This brief is submitted in triplicate.

This brief is accompanied by a Response Transmittal and Fee Authorization, authorizing the requisite fee of \$320.00 as set forth in § 1.17(c). In the event that the Response Transmittal and Fee Authorization is not enclosed, please charge any required fee (other than an issue fee) during the pendency of this Application to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Please credit any excess payment to the same account.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time under 37 CFR § 1.136(a) for a period of time sufficient to enable this document to be timely filed. Any fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 CFR §§ 1.16 and 1.17, other than an issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account 18-1260. Any refund should be credited to Deposit Account 18-1260.

REAL PARTY IN INTEREST (37 C.F.R. § 1.192(c)(1))

The real party in interest in the present Application is Minolta Co., Ltd., a corporation of Japan, having an office at Osaka Kokusai Building, 3-13, 2-Chome, Azuchi-Machi, Chuo-Ku, Osaka-Shi, Osaka, Japan 541-8556.

RELATED APPEALS AND INTERFERENCES (37 C.F.R. § 1.192(c)(2))

There are no related appeals or declared interferences that will directly affect or be directly affected by the present Application to the knowledge of the undersigned.

STATUS OF CLAIMS 37 C.F.R. § 1.192(c)(3)

This Application is a request for continued examination application, U.S. Application Serial No. 08/941,459, filed September 30, 1997.

The Application was originally filed with twenty-six (26) claims. A restriction requirement resulted in the examination of claims 4-6, 13-16 and 23-26. During prosecution, new claims 27-35 were added. As a result, claims 4-6, 13-16 and 23-35 stand rejected and are the subject of this appeal. Claims 4-6, 13-16 and 23-35, a total of 20 claims, are now pending.

The status of the claims is, therefore, believed to be as follows:

Allowed claims:	None
Claims objected to:	None
Claims rejected:	4-6, 13-16 and 23-35

Appellant hereby appeals the Examiner's final rejection of claims 4-6, 13-16 and 23-35 in this matter which presently stand rejected over the cited references of record.

Appealed claims 4-6, 13-16 and 23-35, as amended, are set forth in Appendix A (attached hereto) pursuant to 37 C.F.R. § 1.192(c)(9).

STATUS OF AMENDMENTS (37 C.F.R. § 1.192(c)(4))

No amendments were filed by Appellant in response to the Final Office Action on December 17, 2002 (hereinafter the Final Office Action). All previous amendments have been entered, and are of record.

SUMMARY OF INVENTION (37 C.F.R. § 1.192(c)(5))

The present invention relates to an image processing device as may be found in a copier as shown in Figure 1 and described on page 14, line 10 through page 19, line 11. In

particular, the image processing device will not allow the user to select an invalid mode of operation as noted on page 3, lines 6-20. For example, the image processing device will not permit the user to select a staple mode when the copies are of differing sizes. In a second example, the image processing device prohibits the user from selecting an economy mode that prints on both sides of a sheet of paper when the originals are of different sizes.

The overall operation sequence is described starting on page 29, line 25 and continues through page 41, line 24, and is illustrated in Figures 9-16. In summary, the image processing device stores pixel density data from a plurality of frames in a memory. The pixel density data may be obtained, for example, by scanning a plurality of original frames or pages. [Page 30, line 5 through page 31, line 7 and Figure 9.] The image processing device includes a state decision controller that determines the state of each frame of pixel density data. [Page 36, line 11 through page 37, line 11 and Figure 14.] Example states include frame size and frame length of the pixel density data. The image processing device includes an operation panel whereby a user may select one of a number of possible modes of operation. Two of the many possible modes of operation were noted above as staple and economy.

Once the state of each frame of pixel density data is known, certain modes of operation will be determined to be incompatible with the stored pixel density data and selection of such modes will be automatically prohibited. [Page 36, line 11 through page 37, line 11 and Figure 14.] As a first example, the state decision controller determines that two different frame lengths are present. The selection prohibiting controller will then automatically prohibit selection of the stapling mode as the final copies would be of different lengths and incompatible with stapling. As a second example, the state decision controller determines two different frame sizes are present. The selection prohibiting controller will then automatically prohibit selection of the economy mode as a copy of a first size frame on the front of a sheet of paper is undesirable when a copy of a different size frame is printed on the back of the sheet of paper.

ISSUES PRESENTED FOR REVIEW (37 C.F.R. § 1.192(c)(6))

Issue No. 1. The status of the claims, as recorded in the Advisory Action, mailed April 4, 2003 (hereinafter the Advisory Action) is as follows: Claims 4-6, 13, 14, 27-30 and 35 are rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. Re. 34,460 to Ishiguro et al. (hereinafter the '460 patent) in view of United States Patent No. 5,642,288 to Leung et al. (hereinafter the '288 patent). Claims 15 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the '460 patent in view of the '288 patent, further in view of United States Patent No. 4,912,518 to Matsuo et al. (hereinafter the '518 patent). Claims 23 and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 5,825,988 to Collard et al. (hereinafter the '988 patent) in view of the '288 patent. Claims 25 and 26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the '988 patent in view of the '288 patent, further in view of the '518 patent. Claims 31 and 33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 5,008,709 to Shinada et al. (hereinafter the '709 patent) in view of United States Patent No. 5,987,171 to Wang (hereinafter the '171 patent). Claims 32 and 34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the '709 patent in view of the '171 patent, further in view of United States Patent No. 5,930,006 to Yoshida et al. (hereinafter the '006 patent). Thus, the issue is whether the teachings of these references disclose or suggest all of the limitations of the claims to establish a *prima facie* case of obviousness.

GROUPING OF CLAIMS (37 C.F.R. § 1.192(c)(7))

In regard to Issue No. 1 above, in order to make the appeal process as efficient as possible and for the purposes of this Appeal only, Appellant agrees to have the claims of Issue No. 1 considered in two groups:

- a first group consisting of Claims 4-6, 13-16 and 23-30, which stand or fall together; and
- a second group consisting of Claims 31-35.

The reasons why the above two groups are considered separately patentable are presented in the appropriate part of the argument provided pursuant to 37 C.F.R. § 1.192(c)(8).

ARGUMENT (37 C.F.R. § 1.192(c)(8))

As this Appeal concerns rejections only under 35 U.S.C. § 103, this section includes only arguments pursuant to 37 C.F.R. § 1.192(c)(8)(iv).

A. Grouping of Claims

Claims 4-6, 13-16 and 23-30 are directed to apparatuses that prohibit selection of inoperable modes based upon certain information. In contrast, Claims 31-35 (Group II) are directed to apparatuses that automatically either permit or prohibit operation of certain elements within the apparatuses based upon certain information. Therefore, each of the groups stands or falls separately.

B. Cited References

The Examiner relied upon a total of seven references in the Final Office Action: the '460, the '288, the '518, the '988, the '709, the '171 and the '006 patents. In order to avoid undue repetition of background information and needless restatements as to the subject matter of these references, a discussion of each of the references is provided here.

1. '460

The '460 patent discloses a copying apparatus that includes a stapler in which the stapler mode can be cancelled. The copying apparatus includes a memory, column 13, line 54, but the specifics of what the memory stores is not immediately apparent. It must be noted that the memory cannot store digital image data of any type as the copier "operates on the principle of the commonly known electrophotography." [Column 6, lines 49-50.] That this is not a copier with digital image data is clear due to the presence of the photosensitive drum 2. [Column 6, lines 51-61 and Figure 1.] As indicated by the

Examiner, column 18, line 64 through column 19, line 7 discloses that a comparison is made between the state (size) of the sheet being copied (S1) and the state of the sheet stored in RAM (Sx). If S1 and Sx are the same, then the stapling finishing mode is permitted. If S1 and Sx are different, then the stapling finishing mode is not permitted. The '460 patent discloses an operation panel for selecting a mode of operation from column 12, line 35 through column 13, line 25 and is shown in Figure 18. The apparatus includes a printer using the aforementioned photosensitive drum 2, and a stapler 100, both seen in Figure 1. Lastly the apparatus includes displays 120 and 150 as seen in Figures 16 and 18 respectively with an associated display controller as seen in Figure 20.

2. '288

The '288 patent discloses a document handling apparatus for document recognition and file storage. The overall process is shown in Figure 2 and described in column 3, line 34 through column 4, line 21. The apparatus first scans a document and stores the resultant digital image as pixel density data. A processor sections this data into rectangles and orders these rectangles based upon their location within the image. An overall bounding rectangle is established within which all the other rectangles fall. The processor next determines the location of all the rectangles within the bounding rectangle. Based upon this location information, the processor forms a feature vector for the image based upon the rectangles and their locations. The processor then compares this feature vector to previously stored document feature vectors and determines the appropriate filing location for the current document. This method is the modern equivalent of the slow task of having a person examine a paper document and store it in the appropriate file cabinet.

3. '518

The '518 patent discloses an automatic document feeder for copying a pair of documents onto a single side of a page or four documents may be copied, two on each side of a page. [Column 3, lines 36-68.] This method employs accurate placement of a pair of documents on a platen for scanning and subsequent printing while the pair of documents is discharged into a discharge tray. Of relevance to this application is that when the feeder

encounters a pair of documents that are of different sizes, the copying operation is inhibited and the documents discharged. [Column 21, lines 58-68.] Note that the '518 patent discloses a photosensitive drum 10 and therefore is an analog copier that does not use digital image data. [Column 5, lines 24-41 and Figure 1.]

4. '988

The '988 patent discloses an apparatus for printing digital image data. The apparatus includes a memory or storage means 15 for storing image. A print job selector is disclosed in column 7, lines 18-27, corresponding to element 69 in Figure 6B. A printing unit 3 is disclosed for printing digital image data in column 3, lines 25, 26. An operating unit 19, shown in Figures 6A and 6B permits an operator to select from a plurality of print modes.

5. '709

The '709 patent discloses a copier for copying a document having pages of varying sizes onto paper either the same size as the original pages or onto a uniform size of paper. [Abstract.] This analog copier includes photoconductive drum 13 for electrostatically creating an image of the document being copied, and thus does not create digital image data. [Column 5, lines 31-51 and Figure 1.] Because of the photoconductive drum, the copier prints an image based upon the image exposed on the photoconductive drum. [*Id.*] The copier includes a recycling document handler (RDH) 10 that handles documents of different sizes to be copied. [Column 5, lines 4-12 and Figures 1 and 3.] A set of optics 4 is used to image the different size documents onto the photoconductive drum. [Column 5, lines 29-34 and Figure 1.] The '709 copier uses a document sensor 37 to determine the physical size of a document and the number of documents. [Column 7, lines 15-25.]

6. '171

The '171 patent discloses a page analysis system that generally determines whether scanned images include blocks of text and/or images and if images are present, whether

the images are halftone images, line drawings, a joint line, or other. The '171 patent makes these determinations through the use of a scanner 416 that provides bit map image data of the document scanned. [Column 4, lines 55-58.] The system further includes a memory 411 for storing the bit map image data and a central processing unit 520 for processing the bit map image data. [Column 4, lines 47-54 and column 5, lines 1-15.] Lastly, the system includes a printer 418 for outputting the processed document images. [Column 4, lines 61-62.]

7. '006

The '006 patent discloses an image editing apparatus, and in particular, one that sets the number of document images that can be printed on a single side of a page based on character size. [Abstract.] The image editing apparatus includes a CCD 16 for photoelectrically converting a light image of the document into digital data upon passing through the image signal processing part 20. [Column 6, lines 6-25 and Figure 1.] The resultant digital data is stored in an image memory 304. [Column 6, lines 47-57.] A controlling part 100 includes central processor 2 for image processing to effect the three different Nin1 edit functions described starting in column 9, line 23 through column 19, line 26. The image editing apparatus includes an image-forming system 70 to print out the edited image. [Column 8, lines 1-48.] The size of the image corresponding to the data for each image is determined by sensor SE51. [Column 5, lines 57-62.] As the size of the image is detected, it appears that the automatic document forwarding device will handle different size originals. The manual Nin1 function permits the user to select the number of originals to be reproduced on a single sheet. [Column 9, lines 33-45.]

C. Issue One

1. Group I: Claims 4-6, 13-16 and 23-30

In contrast to the cited prior art, independent claim 4 includes:

...
a memory for storing pixel density data of a plurality of frames;

a state decision controller for determining, for each frame, a state of a frame of said pixel density data stored in said memory;

...
a selection prohibiting controller for comparing the state between at least two frames, as determined by the state decision controller, and for automatically prohibiting selecting an inoperable mode of operation of said plurality of modes of operation through said operation panel based on the result of said comparison.

The Appellant respectfully suggests that these three elements are not present in the Examiner cited prior art.

On page 3, line 4 of the Advisory Action, the Examiner cites column 18, line 64 through column 19, line 7 for the proposition that “Ishiguro teaches of comparing the state between at least two frames, as determined by the state decision controller ... wherein the sheet size S1 and Sx are compared, and for automatically prohibiting selecting an inoperable mode of operation of the plurality of modes of operation through the operation panel based upon the result of the comparison...” The Examiner is using sheet size as the “state” of the frame of data, one of several options envisioned by the present application. As required by claim 4, a selection prohibiting controller compares the state between at least two frames. In contrast, the ‘460 patent does not compare the state between at least two frames. As found in column 14, lines 3-10 of the ‘460 patent, “the sheet size (Sx) selected is inputted at step S11.” In other words, Sx is not determined by a state decision controller as required by claim 4, but rather is an operator input. The Examiner’s rejection thus does not show the limitation of claim 4 requiring a selection prohibiting controller compare the state of at least two frames. In further contrast, the ‘460 patent does not disclose automatically prohibiting selecting an inoperable mode of operation through an operation panel. In the Examiner cited column 19, lines 2-7, when an impossible finishing mode is detected, “the finishing mode flag is reset to “0”, that is, the finishing mode is canceled...” In other words, the finishing mode is not completed, but its selection via the operation panel is not prohibited. Thus, the ‘460 patent fails to disclose prohibiting selection of an inoperable mode through the operation panel, a limitation of claim 4. For these reasons, the ‘460 patent fails to disclose or suggest two limitation elements of claim 4 and thus cannot either anticipate or render obvious claim 4.

The '460 patent further fails to disclose or suggest a third element required by claim 4. The '460 patent does not include a memory for storing pixel density data of a plurality of frames. As noted in the '460 summary above, the '460 patent is based upon the analog electrophotography process and therefore does not store in memory any image data in any format, let alone pixel density data as required by claim 4. On page 3, Line 13 of the Advisory Action, the Examiner states "Leung is relied on to teach storing pixel density data of a plurality of frames." Because the '460 patent does not use a memory for storing image data of a plurality of frames, the Examiner cannot rely upon the '288 patent for the use of pixel density data, as the two are incompatible technologies. Therefore, Appellant respectfully submits the rejection of claim 4 as being unpatentable over the '460 patent in view of the '288 patent is incorrect as the patents are incompatible and thus cannot render obvious the invention of claim 4.

Claim 5 depends from claim 4. As shown above, the '460 and the '288 patents do not render obvious claim 4. Thus, claim 5 is non-obvious for at least the same reasons as claim 4. In addition, claim 5 includes the limitation that the state controller determines the length of a frame of pixel density data in a predetermined direction. The Examiner asserts on page 8 of the Final Office Action that the '288 patent discloses "the state decision controller determines a length of a frame of the image data..." In particular, the Examiner cites steps 870 and 880 in Figure 9 as explained starting in column 6, line 64 through column 7, line 13. A careful reading of the indicated section reveals "[f]or each rectangle located in the image, the vertical height of the rectangle is calculated from the top and bottom coordinates..." In other words, the height that is found is for a rectangle of text or an image, such as rectangles 340, 350, 360 and 370 in Figure 5, not for the entire frame as required by claim 5. As disclosed beginning on page 36, line 22 of the current application, "[i]f the image data all have a same length in the subscanning direction ... the image data of the originals all have a same frame size and a print mode can be changed..." It would be a tortured reading of "frame" to equate frame with one of the many rectangles that the '288 patent might find on a single page of the original document as seen in Figure 5. Thus, the combination of the '460 and '288 patents fails to disclose or render obvious the invention of claim 5.

Depending from claim 4, claim 6 is similar to claim 5 except that frame size rather than frame length is being determined. For at least these same reasons, claim 6, like claims 4 and 5, is not rendered obvious by the combination of the '460 and '288 patents.

Claim 27, which depends from claim 4, further comprises a display for displaying an operating state of the apparatus and a display controller operating the display. As claim 4 is not obvious in light of the combination of the '460 and '288 patents, claim 27 is rendered non-obvious for at least the same reasons.

Similar to claim 4, independent claim 13 includes the elements:

...
a memory for storing pixel density data of a plurality of frames;
a state decision controller for determining, for each frame, a state of a frame of said pixel density data stored in said memory;

...
a selection prohibiting controller for comparing the state between at least two frames, as determined by the state decision controller, and for automatically prohibiting selection of an inoperable print mode of said plurality of print modes through said operation panel based on the result of said comparison.

As discussed above, the '460 patent does not include a memory for storing pixel density data as it is an electrophotography-based analog copier and does not store image data in any format. Because the '460 patent discloses an electrophotography-based copier, even if the '288 patent does store pixel density data, it would be incompatible with the '460 patent's analog process. Additionally, the combination of the '460 and '288 patents does not disclose a state decision controller used in conjunction with a selection inhibiting controller that compares the state of at least two frames. Similarly, the '460 and '288 patents do not automatically prohibit selection of an inoperable mode through an operation panel. Therefore, like claim 4, the Appellant respectfully asserts that claim 13 is not rendered obvious by the combination of the '460 and '288 patents.

Claim 14, which depends from claim 13, further comprises a stapler, and requires that the selection prohibiting controller prohibit selecting a staple print mode through the

operation panel when the frame sizes are different. Claim 14 is thus rendered non-obvious in light of its dependence from non-obvious claim 13. Furthermore, as discussed above, the '460 patent does not prohibit selection of an inoperable print mode (such as a staple print mode) via the operation panel, it merely does not carry out the selected operation. Therefore, claim 14 is not obvious in light of the '460 and '288 patents both through claim 13 and through the additional limitations of claim 14.

Claim 15 depends from claim 13, and specifies that one of the print modes is a two-side print mode that cannot be selected through the operation panel when the frame sizes are different. While the '518 patent discloses a two-side print mode, it does not prohibit selection of this mode via an operation panel when the frame sizes are different as required by claim 15. On page 17 of the Final Office Action, the Examiner cites column 21, lines 58-68 as indicating this prohibition. The actual language is "[w]hen documents of other sizes or orientation are fed, the copying operation is inhibited and the documents are discharged." [Emphasis added.] Thus, the combination of the '460, '288 and '518 patents fails to disclose each requirement of claim 15 and therefore cannot render claim 15 obvious.

Claim 16 is similar to claim 15 except that an economy print mode is disclosed rather than the two-sided print mode of claim 15. While the '518 patent discloses an economy printing mode, it does not prohibit selection of this mode via an operation panel when different frame sizes are encountered as required by claim 16. For at least these reasons, claim 16, like claim 15, is not anticipated by the combination of the '460, '288, and '518 patents.

Claim 23 recites, in part:

...
a state decision controller for determining, for each frame, a state of a frame of said pixel density data contained in said print job selected by said print-job selector;

...
a selection prohibiting controller for comparing the state between at least two frames, as determined by the state decision controller, and for

automatically prohibiting selecting an inoperable print mode of said plurality of print modes through said operation panel based on the result of said comparison.

These elements are similar to those found in claims 4 and 13, but the memory stores a plurality of print jobs having two or more frames of data rather than the plurality of frames specified in claims 4 and 13.

The Advisory Action states claim 23 is rejected as being unpatentable over the '988 patent in view of the '288 patent, and thus a different analysis is required. As before, the Examiner relies on the '288 patent for storing pixel density data, so the remaining elements are to be found in the '988 patent. The Examiner on page 19 of the Final Office Action finds control module 18 determines "for each frame, a state of a frame of the image data contained in the print job selected by the print job selector..." More specifically, the Examiner cites to column 7, lines 28-37 for this proposition. The indicated section notes a "data file may be provided with control data relating to the finishing of the prints, e.g., a specific number of prints, stapling of the set of prints, and format of the printing paper." It appears all of this data is for a single file and uses the same size paper. If not, the formats of the printing paper would be provided. The result is that no determination is made at the frame level that would lead to prohibiting selection of an inoperable print mode through an operation panel. Even if the '988 patent did disclose a frame by frame comparison of states within a print job, which it is not apparent that it does, the '988 patent does not disclose automatically prohibiting selection of an inoperable mode through the operation panel.

The Final Office Action, but not the Advisory Action, cited the '460 patent for supplying the controller that automatically prohibits selecting an inoperable print mode through the operation panel. However, as noted above, the '460 patent does not prohibit selection of an inoperable mode based upon any comparison of states between frames. The '460 patent merely does not complete processing when an inoperable mode is selected. Therefore, the combination of the '988, '288 and '460 patents fails to disclose each element of claim 23 and thus cannot render obvious the apparatus of claim 23.

Claim 24, which depends from claim 23, further comprises a stapler, and requires that the selection prohibiting controller prohibit selecting a staple print mode through the operation panel when the frame sizes are different. Claim 24 is thus rendered non-obvious in light of its dependence from non-obvious claim 23. Furthermore, as discussed above, the '460 patent does not prohibit selection of an inoperable print mode (such as a staple print mode) via the operation panel, it merely does not carry out the request operation. Therefore, claim 24 is not obvious in light of the combination of the '988, '288 and '460 patents, both through claim 23 and through the additional limitations of claim 24.

Claim 25 depends from claim 23, and specifies that one of the print modes is a two-side print mode that cannot be selected through the operation panel when the frame sizes are different. Claim 25 is thus rendered non-obvious in light of its dependence from non-obvious claim 23. As noted above, the '518 patent does not prohibit selection of the two-side print mode when the frame sizes different as required by claim 25. Thus, the combination of the '988, '288, '460 and '518 patents fails to disclose each element of claim 25 and therefore cannot render claim 25 obvious.

Claim 26 depends from claim 23, and specifies that one of the print modes is an economy print mode that cannot be selected through the operation panel when the frame sizes are different. Claim 26 is thus rendered non-obvious in light of its dependence from non-obvious claim 23. As noted above, the '518 patent does not prohibit selection of the economy print mode when the frame sizes different as required by claim 26. Thus, the combination of the '988, '288, '460 and '518 patents fails to disclose each element of claim 26 and therefore cannot render claim 26 obvious.

Independent claim 28 recites:

An image processing device operable in a plurality of modes of operation, comprising:
a memory for storing pixel density data of a plurality of frames;
a state decision controller for determining, for each frame, a state of a frame of said pixel density data stored in said memory;
a selection prohibiting controller, responsive to said state decision controller, for comparing the state between at least two frames, as

determined by the state decision controller, and for determining an inoperable mode of operation of said plurality of modes of operation based on the result of said comparison; and
an operation panel, responsive to said selection prohibiting controller, for selecting any of said plurality of modes of operation, said operation panel automatically prohibiting selecting said thus determined inoperable mode of operation.

Similar to claim 4, claim 28 requires a memory, a state decision controller and a selection prohibiting controller.

The Examiner has rejected claim 28 over the '460 patent in view of the '288 patent. As has been explained above in detail, the combination of the '460 and '288 patents fails to disclose prohibiting selection of an inoperable mode of operation through an operation panel. As claim 28 requires prohibiting selection of an inoperable mode of operation through an operation panel, the combination of the '460 and '288 patents fails to render obvious the device of claim 28.

Depending from non-obvious claim 28, claim 29 uses the size of a frame as the state to be determined. For at least the same reasons as claim 28, claim 29 is not rendered obvious by the combination of the '460 and '288 patents.

Depending from non-obvious claim 28, claim 30 recites print modes including economy, two-sided, and staple print modes. For at least the same reasons as claim 28, claim 30 is not rendered obvious by the combination of the '460 and '288 patents.

Accordingly, in view of the above, Appellant respectfully requests that the rejection of Group I, claims 4, 6, 13, 14 and 27-30, under 35 U.S.C. § 103(a) as being anticipated by various combinations of the '460, '288, '988 and '518 patents be reconsidered and withdrawn.

2. Group II: Claims 31-35

Claim 31 recites, in part:

...
a sensor for reading an image on an original;
a memory for storing pixel density data read by said sensor;
means for editing pixel density data from said pixel density data
stored in said memory;

...
means for determining a size of an image corresponding to said
pixel density data of each image stored in said memory; and
means for controlling, responsive to said means for determining,
which permits said means for editing to edit an image when all images
corresponding to said plurality of originals are uniform in size and
otherwise prohibiting said means for editing from editing an image.

Thus, claim 31 requires a sensor, a memory for data read by the sensor, means for editing this data, means for determining a size, and means for controlling.

On page 25 of the Final Office Action, the Examiner notes the '709 patent discloses "a sensor (document sensor 37) for reading an image on an original (column 7, lines 8 through 48)..." The sentence starting at column 7, line 8 of the '709 patent states, "[a] document sensor 37 is responsive to the size and the number of documents D which have been fed from the tray 1." In other words, document sensor 37 only senses the presence or absence of the document; it does not read an image on an original as required by claim 31. As with the '460 patent, it is clear that the '709 patent is based upon analog electrophotography technology. Column 5, lines 31-39 discloses focusing an image of a document on photoconductive drum 13, thereby forming a latent electrostatically charged image.

The '709 patent, by necessity, must also fail to disclose a memory for storing pixel density data as the '709 patent discloses an analog copier. The Examiner, on page 25 of the Final Office Action, cites column 14, line 64 to column 15, line 9 for a memory element. Looking at column 15, line 1, one finds that the memory, RAM 215, is for "temporarily storing control data..." [Emphasis added.] Because the '709 patent does not

create pixel density data, or any other form of digital image data, the RAM 215 cannot correspond to the memory required by claim 31

Claim 31 continues by requiring means for editing pixel density data. As the '709 patent does not disclose pixel density data (or any other form of image data), there can be no means for editing this data. On page 25 of the Final Office Action, the Examiner claims the '709 patent discloses "means (priority magnification select subroutine) for editing data..." The priority magnification select subroutine detects the correct magnification for the desired copies and causes a lens 9 to move to the desired location, thereby allowing the image of document to be focused on the photoconductive drum 13. [Column 37, lines 15-18.] Therefore, even taking the unsupportable position that the latent image stored on the photoconductive drum is the same as storing pixel density data, the image is altered before it is ever stored, not from the memory as required by claim 31.

In further contrast, the '709 patent does not disclose means for controlling that permits image editing when originals are of uniform size and prohibits image editing otherwise. The Examiner, on page 26 of the Final Office Action asserts "the means for editing, being the magnification routine, is prohibited on documents which are not uniform in size with the selected size." In support of this, the Examiner cites to column 39, line 56 through column 40, line 68 of the '709 patent, as well as column 41, lines 24-40. In fact, the first paragraph starting at column 39, line 56 describes a process whereby originals of differing sizes are copied in one process. All of the originals of a first size requiring a first magnification are copied and temporarily stored. The magnification is then changed and the portion of the originals of a second size requiring this second magnification are copied and temporarily stored. This continues until all required magnifications have been used and copies of all the different size originals are made. In other words, the '709 patent discloses the exact opposite of what claim 31 requires, that editing be prohibited when originals are of different sizes. Column 41, lines 24-40 similarly disclose that an original document including two different size originals can be efficiently copied by copying all of the first size at a first magnification and then copying all of the second size at a second magnification. As before, there is no prohibiting of editing when the originals are not of a

uniform size as required by claim 31. For this reason, Appellant respectfully submits that the '709 patent fails to disclose several of the required elements of claim 31.

The Examiner attempts to use the '171 patent to provide the missing elements from the '709 patent. The '171 patent does disclose at column 4, lines 55-58, a scanner 416 in which bit map image data is created. Thus, as with the combination of the '460 and '288 patents, the Examiner is again attempting to force the core of a digital copier system into an incompatible, analog electrophotography-based copier.

The Examiner, on page 26 of the Final Office Action, asserts the '171 patent discloses from column 13, line 46 through column 14, line 17, "means for editing image data from pixel density data stored in memory..." Column 13, lines 46-50 actually disclose that if the original was too skewed for the block selection application to operate, it outputs an error code, which seems to have nothing to do with a means for editing image data. The remainder of the Examiner cited section describes a process whereby blocks are combined. This description fails to disclose any editing of the data, that is, altering of the data, the process merely changes how portions (blocks) of the image are identified without any editing of the underlying data occurring. As no editing of data is disclosed, prohibition of data editing based upon different size originals, as required by claim 31, is not disclosed.

On page 26 of the Final Office Action, the Examiner cites column 8, lines 20-67 for support of "means for determining a size of an image corresponding to the pixel density data..." However, a more careful reading shows this discussion to cover "the size of the connected components" in line 20, a "reasonable text size" in line 33, etc. In other words, this section, and the entire '171 patent, are based upon blocks within an image as shown in Figures 12 and 14. The '171 patent does not disclose means for determining a size of an image, only blocks within an image.

For all of these reasons, the combination of the '709 and '171 patents does not disclose each of the elements required by claim 31. Therefore, the combination of the '709 and the '171 patents fails to render obvious the apparatus of claim 31.

Claim 32 depends from claim 31, and specifies that the means for editing data can edit data such that two images could be printed on a single side of a sheet. Claim 32 is rendered non-obvious in light of its dependence from non-obvious claim 31. The Examiner, on page 29 of the Final Office Action, cites the '006 patent for disclosing "means for editing an image in the manner suitable for providing two images for printing on a single side of a sheet..." Even if the '006 patent does disclose this type of editing, this alone will not be sufficient, even with the combination of the '709 and '171 patents to disclose each and every requirement of claim 32. Thus, the combination of the '709, '171 and '006 patents fails to render obvious the apparatus of claim 32.

Independent claim 33 includes many of the elements of claim 31, but rather than having means to edit pixel density data, claim 33 includes a stapler. Similar to claim 31, claim 33 prohibits an action when originals are not of a uniform size while permitting an action when the originals are of uniform size. As discussed above, the '709 patent does not include a memory as required by claim 33 for storing pixel density data as it is an electrophotography-based copier and does not store image data in any format. Because the '709 patent discloses an electrophotography-based copier, even if the '171 patent does store pixel density data, it would be incompatible with the '709 patent's analog process.

Additionally, the Examiner on page 27 of the Final Office Action, asserts the '709 patent discloses "means for controlling, responsive to the means for determining, which permits the stapler to operate when all images corresponding to the plurality of originals are uniform in size..." In support of this, the Examiner cites to column 40, lines 30-68. A careful reading of this cited section reveals the '709 invention will copy originals of different sizes onto a single size and finish by stapling. This is clearest beginning in line 58 which notes that "a bound set of copies of the same size, i.e., format A4," followed by the magnifications required to alter A3 and B4 format originals to the A4 final format. Thus, the '709 patent permits originals of different sizes to be copied onto the same size paper and stapled. In other words, the exact opposite of what claim 33 requires, prohibition of stapling when the originals are different sizes. Alternatively, the Examiner cites column 29, line 46 through column 32 line 17 of the '709 patent. The first control

operation, disclosed starting at column 29, line 46, permits copies to be made of mixed size originals. This operation makes copies of each original on corresponding size paper and staples those of the same size paper together. Thus, a mixed size original having three different sizes would result in three bound (stapled) sets of copies. This is in contrast to claim 33, which would prohibit all stapling due to the three different original sizes. The second control operation, starting in column 30, line 4, is similar to the first control operation but produces only two bound sets of copies due to the presence of only two different size originals. The third through sixth control operations similarly produce bound copies, each having only a single size, with the number of bound copies equaling the number of original sizes. In contrast, the presence of different size originals in claim 33 would prohibit operation of the stapler. Therefore, the Appellant respectfully asserts that claim 33 is not rendered obvious by the combination of the '709 and '171 patents.

On page 29 of the Final Office Action, the Examiner rejects claim 34 for many of the same reasons as claim 32. However, as shown above, the rejection of claim 32 cannot stand, as the '709 and '171 patents are not combinable and do not show each of the required elements. Claim 34 requires a memory for storing pixel density data. As the '709 patent discloses an analog, electrophotography-based copier, it does not have a memory for storing pixel density data as required by claim 34. Similarly, the cited '709 patent does not include means for editing pixel density data stored in memory as any editing by the '709 patent is merely a change in magnification prior to any image formation. Lastly, any such claimed editing in the '709 patent is not prohibited when originals are of different sizes as described in detail above. The above discussion also showed the addition of both the '171 and '006 patents failed to overcome these shortcomings of the '709 patent. Thus, the Appellant respectfully asserts that claim 34 is not rendered obvious by the combination of the '709, '171 and '006 patents.

Lastly, claim 35 was rejected under the '460 and '288 patents. Claim 35 recites:

An image formation apparatus comprising:
a memory for storing pixel density data corresponding to a

plurality of images;
a print portion for forming an image on a sheet from said pixel density data stored in said memory;
a stapler for stapling a plurality of printed sheets; and
a controller which permits said stapler to operate when all of said plurality of printed sheets have images formed thereon from said pixel density data stored in said memory which are uniform in size and otherwise prohibiting said stapler from operating.

Thus, claim 35 requires a memory, a print portion, a stapler, and a controller for operation of the stapler.

As noted in detail above, the '460 patent does not include, in spite of the assertion by the Examiner on page 14 of the Final Office Action, a memory for storing image data as the '460 copier is based upon the analog electrophotography process. Thus, while the '460 patent does include a printer, it does not include a print portion for forming an image from image data stored in the memory as required by claim 35. The addition of the digital copier found in the '288 patent with its pixel density data, as before, is incompatible with the analog '460 patent and therefore does not overcome the deficiency of the '460 patent.

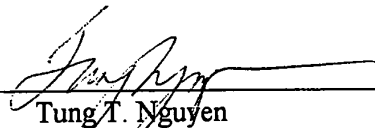
Accordingly, in view of the above, Appellant respectfully requests that the rejection of Group II, claims 31-35, under 35 U.S.C. § 103(a) as being anticipated by various combinations of the '709, '171, '006, '460 and '288 patents be reconsidered and withdrawn.

D. Conclusion

In view of the foregoing, no rejection based on obviousness has been established with regard to claims 4-6, 13-16 and 23-35. Accordingly, the Appellant respectfully requests the Board of Patent Appeals and Interferences to reverse the Examiner's rejections as to all of the appealed claims.

Respectfully submitted,

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APPENDIX A

(37 C.F.R. § 1.102(C)(9))

4. (Previously Presented) An image processing device operable in a plurality of modes of operation, comprising:

a memory for storing pixel density data of a plurality of frames;

a state decision controller for determining, for each frame, a state of a frame of said pixel density data stored in said memory;

an operation panel for selecting any of said plurality of modes of operation; and

a selection prohibiting controller for comparing the state between at least two frames, as determined by the state decision controller, and for automatically prohibiting selecting an inoperable mode of operation of said plurality of modes of operation through said operation panel based on the result of said comparison.

5. (Previously Presented) An image processing device in accordance with claim 4, wherein said state decision controller determines a length of a frame of said pixel density data in a predetermined direction.

6. (Previously Presented) An image processing device in accordance with claim 4, wherein said state decision controller determines a frame size of said frame of said pixel density data.

13. (Previously Presented) An image forming apparatus operable in a plurality of print modes, comprising:

a memory for storing pixel density data of a plurality of frames;

a printer for reading said pixel density data stored in said memory for each frame and for printing;

a state decision controller for determining, for each frame, a state of a frame of said pixel density data stored in said memory;

an operation panel for selecting any of said plurality of print modes; and

a selection prohibiting controller for comparing the state between at least two frames, as determined by the state decision controller, and for automatically prohibiting selection of an inoperable print mode of said plurality of print modes through said operation panel based on the result of said comparison.

14. (Previously Presented) An image forming apparatus in accordance with claim 13, further comprising a finisher for stapling sheets printed by said printer, wherein:

said state decision controller determines whether said pixel density data stored in said memory includes pixel density data having a frame size different than a frame size of other pixel density data stored in said memory; and

said selection prohibiting controller prohibits selecting a staple print mode through said operation panel when it is determined that said memory includes pixel density data having a frame size different than a frame size of other pixel density data stored in said memory,

said staple print mode being provided so that said finisher provides a staple processing.

15. (Previously Presented) An image forming apparatus in accordance with claim 13, wherein:

said state decision controller determines whether said memory stores said pixel density data different in frame size from other said pixel density data stored in said memory; and

said selection prohibiting controller prohibits selecting a two-side print mode through said operation panel when it is determined that said memory stores said pixel density data different in frame size from other said pixel density data stored in said memory, said two-side print mode being provided for printing said pixel density data stored in said memory on both sides of a sheet.

16. (Previously Presented) An image forming apparatus in accordance with claim 13, wherein:

said state decision controller determines whether said pixel density data stored in said memory all have a same frame size; and

said selection prohibiting controller prohibits selecting an economy print mode through said operation panel when it is determined that said pixel density data stored in said memory do not all have a same frame size, said economy print mode being provided for printing said pixel density data of a plurality of frames on one same side of a sheet.

23. (Previously Presented) An image forming apparatus operable in a plurality of print modes, comprising:

a memory for storing a plurality of print jobs, each print job containing pixel density data of at least two frames;

a print-job selector for selecting one of said plurality of print jobs stored in said memory;

a state decision controller for determining, for each frame, a state of a frame of said pixel density data contained in said print job selected by said print-job selector;

a printer for printing said pixel density data contained in said print job selected by said print-job selector;

an operation panel for selecting any of said plurality of print modes; and

a selection prohibiting controller for comparing the state between at least two frames, as determined by the state decision controller, and for automatically prohibiting selecting an inoperable print mode of said plurality of print modes through said operation panel based on the result of said comparison.

24. (Previously Presented) An image forming apparatus in accordance with claim 23, further comprising a finisher for stapling sheets printed by said printer;

wherein said print job selected by said print-job selector contains pixel density data of a plurality of frames and said state decision controller determines whether said print job selected by said print-job selector contains pixel density data having a frame size different than a frame size of other pixel density data contained in said print job selected by said print-job selector; and

wherein said selection prohibiting controller prohibits selecting a staple print mode through said operation panel when it is determined that said print job selected by said print-job selector contains pixel density data having a frame size different than a frame size of other pixel density data contained in said print job selected by said print-job selector, said staple print mode being provided so that said finisher provides a staple processing.

25. (Previously Presented) An image forming apparatus in accordance with claim 23, wherein said print job selected by said print-job selector contains pixel density data of a plurality of frames and said state decision controller determines whether said print job selected by said print-job selector includes pixel density data having a frame size different than a frame size of other pixel density data contained in said print job selected by said print-job selector; and

wherein said selection prohibiting controller prohibits selecting a two-side print mode through said operation panel when it is determined that said print job selected by said print-job selector includes pixel density data having a frame size different than a frame size of other pixel density data contained in said print job selected by said print-job selector, said two-side print mode being provided for printing said pixel density data on both sides of a sheet.

26. (Previously Presented) An image forming apparatus in accordance with claim 23, wherein said print job selected by said print-job selector contains pixel density data of a plurality of frames and said state decision controller determines whether said pixel density data contained in said print job selected by said print-job selector all have a same frame size; and

wherein said selection prohibiting controller prohibits selecting an economy print mode through said operation panel when it is determined that said pixel density data contained in said print job selected by said print-job selector do not all have a same frame size, said economy print mode being provided for printing said pixel density data of a plurality of frames on same one side of a sheet.

27. (Previously Presented) An image processing device in accordance with claim 4, further comprising:

- a display for displaying an operating state of said image processing device; and
- a display controller, responsive to said selection prohibiting controller, for displaying on said display an operable mode of operation of said plurality of modes of operation.

28. (Previously Presented) An image processing device operable in a plurality of modes of operation, comprising:

- a memory for storing pixel density data of a plurality of frames;
- a state decision controller for determining, for each frame, a state of a frame of said pixel density data stored in said memory;
- a selection prohibiting controller, responsive to said state decision controller, for comparing the state between at least two frames, as determined by the state decision controller, and for determining an inoperable mode of operation of said plurality of modes of operation based on the result of said comparison; and
- an operation panel, responsive to said selection prohibiting controller, for selecting any of said plurality of modes of operation, said operation panel automatically prohibiting selecting said thus determined inoperable mode of operation.

29. (Previously Presented) An image processing device in accordance with claim 28, wherein said state of said frame of said pixel density data determined by said state decision controller for each frame thereof is a frame size.

30. (Previously Presented) An image processing device in accordance with claim 29, wherein said plurality of modes of operation include at least one of economy print mode, two-side print mode, and staple print mode.

31. (Previously Presented) An image formation apparatus comprising:

- a sensor for reading an image on an original;
- a memory for storing pixel density data read by said sensor;

means for editing pixel density data from said pixel density data stored in said memory,

an image forming portion for using edited pixel density data to print an image;

a feeder capable of feeding originals having different sizes to an image reading position;

means for reading mixed originals for reading a plurality of originals collectively set in said feeder;

means for determining a size of an image corresponding to said pixel density data of each image stored in said memory; and

means for controlling, responsive to said means for determining, which permits said means for editing to edit an image when all images corresponding to said plurality of originals are uniform in size and otherwise prohibiting said means for editing from editing an image.

32. (Previously Presented) An image formation apparatus in accordance with claim 31, wherein said means for editing pixel density data edits an image in a manner suitable for providing two images for printing on a single side of a sheet.

33. (Previously Presented) An image formation apparatus comprising:

a sensor for reading an image on an original;

a memory for storing pixel density data read by said sensor;

an image forming portion for using edited pixel density data stored in said memory to print an image;

a stapler for stapling a plurality of sheets each bearing a formed image thereon;

a feeder capable of feeding originals having different sizes to an image reading position;

means for reading mixed originals for reading a plurality of originals collectively set in said feeder;

means for determining a size of an image corresponding to said pixel density data of each image stored in said memory; and

means for controlling, responsive to said means for determining, which permits said stapler to operate when all images corresponding to said plurality of originals are uniform in size and otherwise prohibiting said stapler from operating.

34. (Previously Presented) An image formation apparatus comprising:
a memory for storing pixel density data corresponding to a plurality of images;
means for editing said pixel density data stored in said memory in a manner suitable for providing two images on a single side of a sheet; and
means for controlling, which permits said means for editing to operate when all said pixel density data stored in said memory are uniform in image size and otherwise prohibiting said means for editing from operating.

35. (Previously Presented) An image formation apparatus comprising:
a memory for storing pixel density data corresponding to a plurality of images;
a print portion for forming an image on a sheet from said pixel density data stored in said memory;
a stapler for stapling a plurality of printed sheets; and
a controller which permits said stapler to operate when all of said plurality of printed sheets have images formed thereon from said pixel density data stored in said memory which are uniform in size and otherwise prohibiting said stapler from operating.